

Title (en)

Method for soldering Dpak-type electronic components to circuit boards

Title (de)

Verfahren zum Löten eines D-pak Bauteiles auf einer gedruckten Schaltungsplatte

Title (fr)

Procédé pour souder des composants électroniques du type D-pak sur une plaquette de circuit imprimé

Publication

EP 0998175 A1 20000503 (EN)

Application

EP 99307378 A 19990917

Priority

US 17204798 A 19981014

Abstract (en)

There is disclosed herein a method for soldering an electronic component 10 having a heatspreader 14 on a bottom surface thereof and at least one lead 18 (e.g., a DPAK-type component) to a circuit board 30 having a heatspreader mounting pad 32 and at least one lead mounting pad 34, comprising the steps of: (a) depositing solder paste 36 on the heatspreader mounting pad 32 and on each of the at least one lead mounting pad 34; (b) placing the electronic component 10 on the circuit board 30 such that the heatspreader 14 rests atop the heatspreader mounting pad 32 and each lead 18 rests atop a respective one of the at least one lead mounting pad 34; (c) directing a laser energy beam 42 from a diode laser 40 at the heatspreader 14 and/or at the heatspreader mounting pad 32 for a first predetermined length of time, thereby heating the solder paste 36 on the pad 32; and (d) continuing to direct the laser energy beam 42 at the heatspreader/pad 14/32 for a second predetermined length of time while simultaneously feeding a predetermined amount of flux-core wire solder 50 into the laser energy beam 42 proximate the heatspreader 14, such that the wire solder 50 melts and flows onto at least one of the heatspreader 14 and the heatspreader mounting pad 32. <IMAGE>

IPC 1-7

H05K 3/34

IPC 8 full level

H05K 3/34 (2006.01)

CPC (source: EP US)

H05K 3/341 (2013.01 - EP US); **H05K 3/3494** (2013.01 - EP US); **H01L 2224/05553** (2013.01 - EP US); **H01L 2224/48091** (2013.01 - EP US); **H01L 2224/48247** (2013.01 - EP US); **H01L 2224/48472** (2013.01 - EP US); **H05K 2201/10166** (2013.01 - EP US); **H05K 2201/10969** (2013.01 - EP US); **H05K 2203/0405** (2013.01 - EP US); **H05K 2203/107** (2013.01 - EP US); **Y02P 70/50** (2015.11 - EP US)

Citation (search report)

- [A] US 5112635 A 19920512 - LIEBERMANN BENNO E [US]
- [A] PATENT ABSTRACTS OF JAPAN vol. 008, no. 280 (M - 347) 21 December 1984 (1984-12-21)

Cited by

EP1246515A3; WO2024012807A1

Designated contracting state (EPC)

DE ES GB

DOCDB simple family (publication)

EP 0998175 A1 20000503; **EP 0998175 B1 20030205**; CA 2286231 A1 20000414; DE 69905229 D1 20030313; DE 69905229 T2 20031224; ES 2191398 T3 20030901; US 6168070 B1 20010102

DOCDB simple family (application)

EP 99307378 A 19990917; CA 2286231 A 19991013; DE 69905229 T 19990917; ES 99307378 T 19990917; US 17204798 A 19981014